Emissions Modeling

National Emissions Inventory Workshop

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Marc Houyoux
MCNC
Mark Janssen
LADCO

Temporal Processing

- Definition: Convert the temporal resolution of the inventory to the resolution needed by the model accounting for time zone and regional differences.

Types of Adjustments

- Seasonal or monthly
- Day of week
- Hour of Day(could be by day of week)
- Time Zone

How are adjustments made?

- Values in the emissions inventory
  - All formats do contain fields for temporal data
- Where data not available scc cross references are available.
  - Default values may not meet your needs Wisconsin motorboats not same as Florida
- 24hours by 7 days global default

Different Types of Inventories

- Average Weekday
- Average Day
- Annual Average Day
- Ozone Season Day
- etc…

Different Profile Examples

Profile	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Light Industry	1	1	1	1	1	.7	.3
Motor-boats	1	1	1	1	1	5	5

Different Profile Examples

- Average Day =
  - Day to calculate(7/sum of all days)
- Average Weekday Factor =
  - Day to calculate(5/Sum of weekdays)

Light Industrial Example

- Average Day =
  - Day to calculate(7/sum of all days)

- Profile Light Industrial
  - Weekday = 1 (7/6) = 1.17
  - Saturday = .7 (7/6) = .82
  - Sunday = .3 (7/6) = .35

Light Industrial Example

- Average Weekday =
  - Day to calculate(5/sum of weekdays)

- Profile Light Industrial
  - Weekday = 1 (5/5) = 1
  - Saturday = .7 (5/5) = .7
  - Sunday = .3 (5/5) = .3

Motorboat Example

- Average Day =
  - Day to calculate(7/sum of all days)

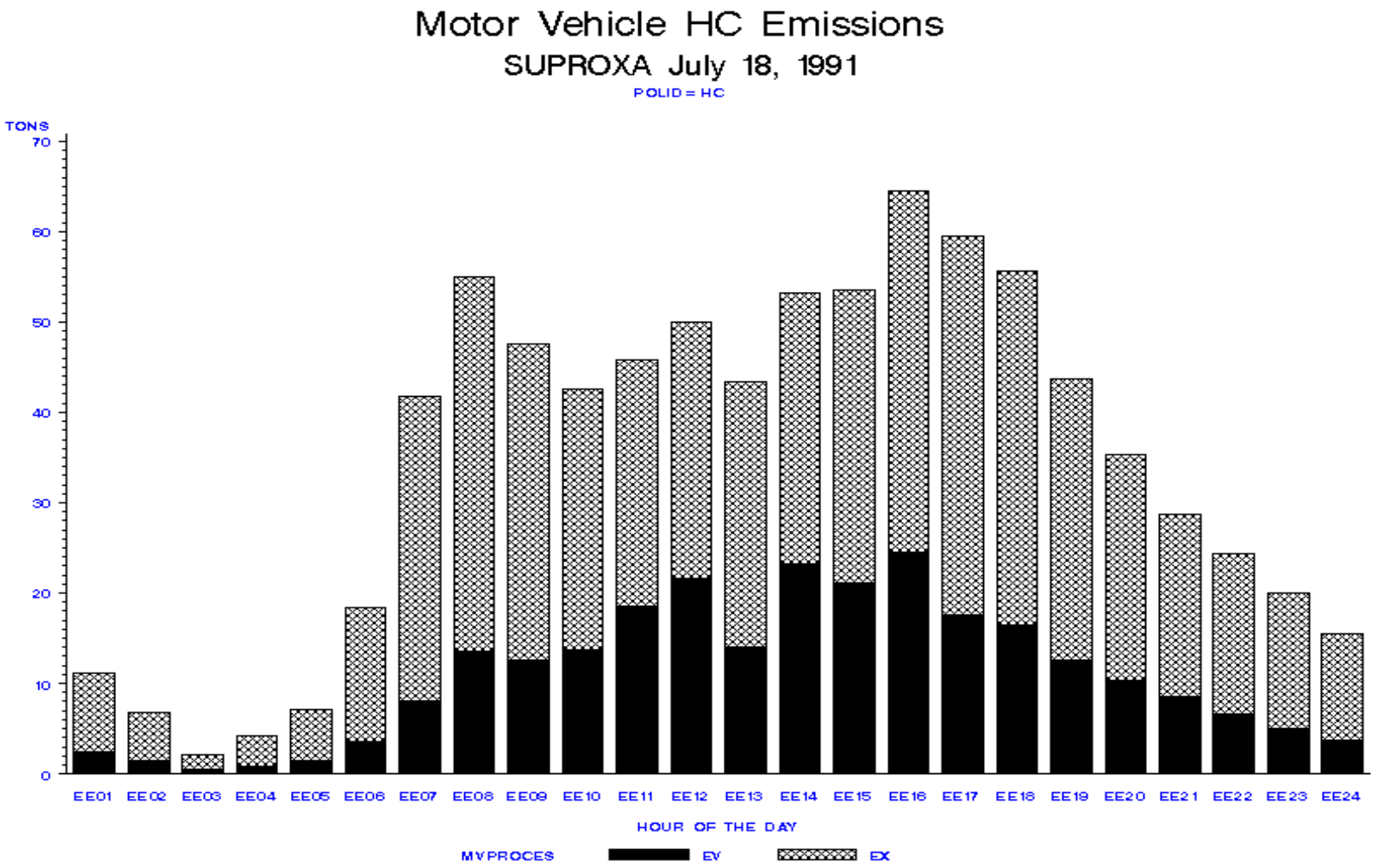
- Profile : Motorboats
  - Weekday = 1 (7/15) = .47
  - Saturday = 5 (7/15) = 2.35
  - Sunday = 5 (7/15) = 2.35

Motorboat Example

- Average Weekday =
  - Day to calculate(5/sum of weekdays)

- Profile : Motorboats
  - Weekday = 1 (5/5) = 1
  - Saturday = 5 (5/5) = 5
  - Sunday = 5 (5/5) = 5

Motorboat Example



Conclusions

- Be specific about the temporal attributes of emissions your submitting
- Know how people are using your temporal information. To a modeler 24 Hours by 7 days results in equal emissions every day every hour.

Modeling Quality Assurance

- NOT Permitting, All source are not created Equal.
- Focus on largest mass sources close to your receptor region.
- Mass is not the only issue(Temporal, Speciation, Spatial Allocation)
- Give up “Do what you know” style
- EPA guidance does not awknowlege this

Concrete Steps a State Can Take

- Most states should do minimal Point QA
- Focus on Largest area source/Non-road catagories
- Improve Motor Vehicle Attributes
  - Vehicle Mix
  - speed
  - temporal
  - Speciation
  - networks?(does it improve other data?)

Concrete Steps a State Can Take(2)

- Test Modelers
  - Look at totals
  - See graphics charts/totals